NEUROSCIENCE AND BEHAVIORAL PHYSIOLOGY
Volume 24, Numbers 1-6, 1994

Engl.

Volume 24, Number 1, January-February, 1994

NEUROBIOLOGY OF THE SNAIL
The Long Path of the Snail - D. A. Sakharov 1
The Architecture of the Reflex Arc - E. N. Sokolov 5

1. NERVOUS SYSTEMS OF THE SNAIL
Nervous System and Neural Maps in Gastropod *Helix lucorum* L. - V. N. Ierusalimsky, I. S. Zakharov, T. A. Palikhova, and P. M. Balaban 13
Identified Neuronal Individuals in the Buccal Ganglia of *Helix pomatia* - U. Altrup and E.-J. Speckmann 23
Mapping of Neurons Participating in the Innervation of the Body Wall of the Snail - V. N. Ierusalimsky and I. S. Zakharov 33
Newly Identified Nerve Cells of the Snail, *Helix pomatia*, Associated with the Generation of Pacemaker Activity - L. M. Koval' and N. I. Kononenko 41

2. SENSORY SYSTEMS OF THE SNAIL
Structural Organization of the Sensory Systems of the Snail - O. V. Zaitseva 47
The Vision of the Snail: The Spectral Sensitivity of the Dark-Adapted Eye - A. M. Chernorizov, E. D. Shekhter, G. G. Arakelov, and M. M. Zimachev 59

3. NEURONAL MECHANISMS OF THE ORGANIZATION OF BEHAVIOR
Avoidance Behavior of the Snail - I. S. Zakharov 63
Mono- and Polysynaptic Connections between Identified Neurons in the System of the Passive Avoidance Reflex of the Snail - T. A. Palikhova, I. V. Marakueva, and G. G. Arakelov 71
Processing of Mechano- and Chemosensory Information in the Lip Nerve and Cerebral Ganglia of the Snail *Helix pomatia* L. - G. Kemenes 77
Viscerocardiac Reflexes of the Snail - R. E. Bychkov, T. A. Safonova, and V. L. Zhuravlev 89

4. NEURONAL MECHANISMS OF BEHAVIORAL PLASTICITY
Behavioral Plasticity in a Snail and Its Neural Mechanisms - P. M. Balaban, O. A. Maksimova, and H. I. Bravarenko 97
Protein Metabolism in the Formation of the Conditioned Avoidance Reflex of Molluscs - L. N. Grinkevich 105
Dynamics of Defense and Feeding Conditioned Reactions in the Snail during Long-Term Sensitization - Kh. L. Gainutdinov 111
Facilitation of Defense Reactions during the Consumption of Food in Snails: The Participation of Glucose and Gastrin/Cholecystokinin-like Peptide - A. V. Shevelkin 115
Mechanisms of the Development of Sensitizations in the Snail: The Participation of Calcium and Calmodulin - V. P. Nikitin, M. O. Samoilov, and S. A. Kozyrev 125
Conditioning and Sensitization in the Snail: Neurophysiological and Metabolic Characteristics - V. P. Nikitin, S. A. Kozyrev, and M. O. Samoilov 133
5. NEURONAL RECEPTORS AND MEDIATOR SYSTEMS. NEUROPHARMACOLOGY
Cholinoreceptor Neurons of the Snail: Identification, Plasticity, and Its Regulation by Opioids and Second Messengers - A. S. Pivovarov 141

Influence of Oxytocin on Identified Neurons of the Brain of the Snail *Helix pomatia* L. - O. N. Osipenko 153

Volume 24, Number 2, March-April, 1994

State of Hypophyseogonadal System in Male Rats with Diabetes (Experimental Investigation) - V. N. Babichev, T. A. Peryshkova, and E. I. Adamskaya 159
State of the Vasopressin-, Oxytocin-, and Corticoliberin-Synthesizing Structures of the Hypothalamus in Experimental Diabetes in Rats of Both Sexes - Yu. M. Kolesnik, Yu. N. Orestenko, and A. V. Abramov 163
Features of Active Avoidance Learning in Rats with Streptozotocin Diabetes - Yu. I. Zaraiskaya, E. A. Aleksandrova, A. O. Lukashev, and N. A. Shvyrkova 167
Influence of Tryptophan on the Content of Regulatory Neuropeptides and Cyclic Nucleotides in the Brain and Blood - V. V. Lobov, V. S. Prospelov, and A. N. Bykhovtsev 170
A. A. Ukhtomskii's Ideas on the Nature of Man - A. S. Batuev and L. V. Sokolova 173
Coherence Analysis of the Electrical Activity of the Rabbit Brain in the Presence of a Hunger Dominant - R. A. Pavlygina, Yu. V. Lyubimova, and V. I. Davydova 186
Correlational Association between Changes in Cell Excitability and Synaptic Efficiency during Posttetanic Reorganizations in the Cortex - R. G. Kozhedub 192
Influence of Motivational Centers of the Hypothalamus on the Functioning of the Visual Area of Cerebral Cortex - N. A. Gadzhieva and A. I. Dmitrenko 197
Excitatory and Inhibitory Monosynaptic Peptidergic Transmissions in the Cns of the Snail *Helix pomatia* - N. I. Kononenko 203
Possible Mechanisms of Plastic Reorganizations of Neutronal Activity during Different Schedules of Intracellular Electrostimulation According to the Data of Systems Analysis - Ya. I. Verbnyi and A. Ya. Mogilevskii 209
Is the Electrical Activity of the Brain Always Electrical? (The Factors Forming the Potential of the Metallic Electrode during Its Direct Contact with the Brain) - T. B. Shvets-Tenéta-Gurii, M. R. Novikova, I. N. Tveritskaya, and N. M. Khonicheva 216
Processes of Visual Recognition in Monkeys and Their Neuronal Correlates in the Visual Cortex: The Influence of a Blocker of M-Cholinoreceptors - K. N. Dudkin, V. K. Kruchinin, and I. V. Chueva 223

Volume 24, Number 3, May-June, 1994

The Potentials of Magnetic Resonance Tomography in the Diagnosis of the "Empty" *Sella turcica* - I. I. Dedov, T. S. Zenkova, G. A. Mel'nichenko, O. I. Belichenko, and I. D. Fedina 229
Consciousness and the Brain - P. V. Simonov 234
Interaction Foci, Information Synthesis, and Mental Activity - A. M. Ivantskii 239
The Perceptive, Mnemic, and Semantic Levels of Subjective Representation - E. N. Sokolov 246
Problems of the Analysis of Altered States of Consciousness - M. V. Frolov 248
The Neurophysiological Parameters of Human Memory - A. N. Lebedev 254
The Pacemaker of Dominant Motivation - K. V. Sudakov 260
Corticohypothalamic Relationships during the Development and Realization of the Conditioned Reflex - P. V. Simonov 267

Some Biological Mechanisms of the Inborn Predisposition to Alcoholism - I. P. Anokhina, N. L. Vekshina, M. N. Kuznetsova, L. N. Ovchinnikova, A. V. Stanishevskaya, N. A. Khristolyubova, and I. Yu. Shamakina 274
The Manifestation of "Learned Helplessness" in Rats with Various Capacities for Active Avoidance - D. A. Zhukov 280
The Role of Dopaminergic Mechanisms of the Brain in Various Models of Anxious States - A. N. Talalaenko, I. A. Abramets, Yu. V. Stakhovskii, A. A. Shekhovtsov, A. V. Chernikov, and S. L. Shevchenko 284
An Antioxidant-Induced Improvement in the Cognitive Characteristics of Monkeys: Neurophysiological Correlates in the Visual Cortex - K. N. Dudkin, V. K. Kruchinin, and I. V. Chueva 289

Volume 24, Number 4, July-August, 1994

Formation of Hypothalamic Regulation of the Gonadotropic Function of the Hypophysis under the Conditions of Hypoinsulinemia in Rats - V. N. Babichev and I. V. Shishkina 297
Integrative Activity of the Neuron: the Specific Characteristics and Plasticity of Systemic Mechanisms - K. V. Sudakov 301
Neurochemical Cellular Mechanisms of the Assessment of the Results of Behavioral Activity - V. V. Andrianov 310
Reflection of the Systemic Mechanisms of Instrumental Behavior in the Activity of Brain Neurons - Yu. A. Fadeev, V. Volkov, and L. A. Daudova 315
Molecular-Cellular Mechanisms of Learning of the Common Snail - V. P. Nikitin 321
Influence of an Antioxidant on the Impulse Activity of Neurons of the Prefrontal and Inferotemporal Cortex during Visual Recognition in Monkeys - K. N. Dudkin, V. K. Kruchinin, and I. V. Chueva 329
Participation of Cholinergic Structures of the Prefrontal and Inferotemporal Cortex in the Processes of Visual Recognition in Monkeys - K. N. Dudkin, V. K. Kruchinin, and I. V. Chueva 341
Influence of Glutamate on the Content and Metabolism of Dopamine in the Nigrostriatal System of Rats Distinguished by Capacity for Learning - I. V. Karpova and A. F. Yakimovskii 351
Ontogenesis of the Establishment of Various Forms of Higher Nervous Activity - V. G. Kassil' 357

Volume 24, Number 5, September-October, 1994

The Functional Role of the Motor Area of the Cortex in the Formation of Riddance Reactions in Dogs - A. G. Frolov, A. V. Maslov, and O. G. Pavlova 375
Influence of Different Intracellular Electrostimulation Regimes on the Dynamics of the Adaptational Processes of Neurons - A. Ya. Mogilevskii and Ya. I. Verbnyi 386
Identification of a Latent State Arising in the Hippocampus Following the Cessation of Long-Term Potentiation - V. A. Markevich, V. A. Zosimovskii, V. A. Korshunov, G. B. Murzina, and V. L. Ézrokhi 394
Secretory Activity of the Magnocellular Nuclei of the Hypothalamus of the Pink Salmon, *Oncorhynchus Gorbuscha* Walbaum (Salmonidae), When it Moves from Sea to River and Is Transported Back - V. V. Sheiko and A. A. Maksimovich 400

Correlative Relationships between the Specific Binding of Labeled Adrenoligands in the Brain and Plasma Testosterone in Mice - G. T. Shishkina and E. V. Naumenko 405
The Processes of Anticipation and Evaluation of the Results of Behavior and Their Cellular Neurochemical Mechanisms - V. V. Andrianov 408
The Features of the Participation of the Cholinergic Mechanisms of the Accumbens and Caudate Nuclei in the Regulation of an Instrumental Defense Reflex in Dogs - K. B. Shapovalova and E. V. Pominova 414
Influence of Stimulation of Movement-Inhibiting Areas of the Pons on the Activity of Neurons of the Medial Region of the Medullar Oblongata - B. Yu. Mileikovskii 423
Influence of the Neuropeptide Galanin on Active Avoidance in Rats - A. A. Shandra, A. M. Mazarati, and K. L. Servetskii 429
Cholinergic Synapses of the Associative Temporal Area of the Neocortex in the Realization of Cognitive Functions - N. B. Teryaeva and E. I. Mukhin 433
The Influence of Cingulate Cortex Stimulation on the Activity of Neurons of the Motor Cortex in the White Rat - V. Yu. Tsytsarev and T. V. Golikova 438
Long Latency Reflexes and Somatosensory Potentials in Multiple Sclerosis Patients - A. Ts. Iovichich 440
The Use of the Method of Transcranial Micropolarization to Decrease the Severity Hyperkineses in Patients with Infantile Cerebral Palsy - O. V. Bogdanov, D. Yu. Pinchuk, E. V. Pisar'kova, A. M. Shelyakin, and K. T. Sirbiladze 442

Volume 24, Number 6, November-December, 1994

Changes in the Ultrastructural Indices of Axospinous Synapses and the Reactions of Long-Term Posttetanic Potentiation in Surviving Slices of the Sensorimotor Cortex of Mice - I. N. Pavlenko and S. L. Buldakova 447
Regeneration of Nerves under the Influence of Balyse-2 and Lactovit - E. I. Chumasov, A. Ya. Shurygin, S. Yu. Soldatova, K. M. Svetikova, and A. I. Drobyshevskii 452
Target Cells of Serotoninergic Innervation in the Locus Coeruleus - V. A. Otellin, E. G. Gilerovich, and N. B. Mikhailova 457
Influence of Immobilization Stress on the Level of Secretion of Thyroid Hormones - Ya. Kh. Turakulov, R. B. Burikhanov, P. P. Patkhitdinov, and A. I. Myslitskaya 462
Influence of Posttetanic Potentiation of Slices of the Cerebral Cortex of Rats on the Content of Proteins and RNA in Neurons and Gliocytes - N. E. Sokolova, I. N. Kudryavtseva, and U. M. Malikov 465
Role of Bulbospinal Respiratory Neurons in the Generation of the Breathing Rhythm - I. A. Keder-Stepanova 467
Participation of Cholinergic Systems in the Bulbar Mechanisms of the Regulation of Breathing - L. I. Sergeeva and V. E. Kuz'mina 475
Participation of Opiate δ-Receptors in Immunomodulation - M. A. Cheido and G. V. Idova 479
Structural-Functional State of Opiate Receptors in Surviving Slices of the Olfactory Cerebral Cortex of Rats during Long-Term Potentiation - U. M. Malikov 483
Features of the Parkinsonian Syndrome Induced Experimentally by a Deficit of Nigrostriatal Dopamine and Stimulation of Cholinergic Neurons of the Caudate Nuclei - G. N. Kryzhanovskii, M. A. Atadzhanov, T. A. Voronina, and L. N. Nerobkova 485

Neurochemical Mechanisms of the Participation of Individual Neurons in the Processes of Anticipation and Evaluation of the Results of Behavioral Activity - V. V. Andrianov 489
Influence of New ACTH Fragments on Self-Stimulation, Avoidance, and Grooming Behavior in Rabbits - R. A. Burchuladze, R. Chabak, and G. I. Chippens 495
Neurobiology of the Integrative Activity of the Brain: Some Properties of Long-Term Posttetanic Heterosynaptic Depression in the Motor Cortex of the Cat - I. G. Sil'kis, S. Sh. Rapoport, N. V. Veber, and A. M. Gushchin 500
Amiridin and Tacrine Modulation of the Activity and Plasticity of the Cholinoreceptors of Neurons of the Common Snail: Phenomenology and Mechanisms - Yu. V. Burov, E. I. Drozdova, A. S. Pivovarov, and T. N. Robakidze 507